



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/772,315	02/06/2004	Jae-Dong Yoon	0630-1953P	6483
2292	7590	08/28/2006		EXAMINER
BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			EWALD, MARIA VERONICA	
			ART UNIT	PAPER NUMBER
			1722	

DATE MAILED: 08/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/772,315	YOON ET AL.
	Examiner	Art Unit
	Maria Veronica D. Ewald	1722

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 25 April 2006.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) 16-18 is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-15 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 25 April 2006 is/are: a) accepted or b) objected to by the Examiner. Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a). Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: _____.

DETAILED ACTION

Election/Restrictions

13. Applicant's election with traverse of Group I, claims 1 – 15, in the reply filed on April 25, 2006 is acknowledged. The traversal is on the ground(s) that method claims 16 – 18 and apparatus claims 1 – 15 are both for an injection molding apparatus. This is not found persuasive because as stated in the previous Office Action and Election Requirement, the Examiner has shown that the independent claims of Groups I and II are distinct in that they each has a separate classification in the art. Furthermore, the Examiner has shown that the material can be made by another process and the apparatus can be used to perform another process, such as compression molding. Though Applicant may argue that the apparatus is used for injection molding, **a compression molding apparatus is comprised of a fixed mold and a movable mold detachably attached to the fixed mold and forming a molding space together with the internal space of the fixed mold, and thus, the apparatus can be used or is capable of performing another process.**

Furthermore, claim 16, now amended, states that the **mold is injected with a mold material and foaming agent. The apparatus of claim 1 can be used for molding of plastic or resin and need not be limited only for the production of a foamed product.**

Therefore, the requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 102

14. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 – 12 and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Yotsutsuji, et al. (U.S. 4,225,109). Yotsutsuji, et al. teach an injection mold comprising: a fixed mold having a passage for injecting a fluid therethrough and an internal space (item 1 – figure 1; column 3, lines 50 – 51; column 4, lines 35 – 36); a movable mold detachably attached to the fixed mold and forming a molding space together with the internal space of the fixed mold (item 1' – figure 1; column 4, lines 30 – 33); and a same flow accelerating material means provided on the inner walls of both the fixed mold and the movable mold that form the molding space for accelerating flow of the fluid injected into the injection mold (item 13 and 13' – figure 1; column 2, lines 45 – 60; column 4, lines 1 – 5, 30 – 35); wherein the same flow accelerating material means is a solid coating material for increasing insulation of the fluid and reducing a flow resistance of the fluid (column 2, lines 45 – 60); wherein the solid coating material is a polymer coating material (column 4, lines 22 – 26); wherein the polymer used for the polymer coating material is PEEK (poly ether ether ketone) (column 4, lines 22 – 26); wherein the polymer coating material is one of PTFE (polytetrafluoroethylene), PE (polyethylene), and methacrylates (column 4, lines 22 – 26).

With respect to claims 6 – 7, Yotsutsuji, et al. further teach that the solid coating material is a ceramic coating material (column 4, lines 10 – 15); wherein the ceramic coating material is one of aluminum oxide and zirconium oxide (column 4, lines 15 – 19).

With respect to claims 8 – 9, the reference teaches an injection mold comprising: a fixed mold having a passage for introducing a fluid therethrough and an internal space (item 1 – figure 1; column 3, lines 50 – 51; column 4, lines 35 – 36); a movable mold detachably attached to the fixed mold and forming a molding space together with the internal space of the fixed mold (item 1' – figure 1; column 4, lines 30 – 33); and a flow accelerating means provided on an inner wall of the molding space for accelerating flow of the fluid; wherein the flow accelerating means is a solid coating for increasing insulation of the fluid and reducing a flow resistance of the fluid, wherein the solid coating material is a solid lubricant (item 12 – figure 1; column 2, lines 45 – 60; column 3, lines 50 – 60); wherein the solid lubricant is one of graphite, molybdenum and disulfide (column 4, lines 1 – 3, 10 – 15).

With respect to claim 10 – 11, the reference teaches an injection mold comprising: a fixed mold having a passage for introducing a fluid therethrough and an internal space (item 1 – figure 1; column 3, lines 50 – 51; column 4, lines 35 – 36); a movable mold detachably attached to the fixed mold and forming a molding space together with the internal space of the fixed mold (item 1' – figure 1; column 4, lines 30 – 33); and a flow accelerating means provided on an inner wall of the molding space for accelerating flow of the fluid (column 2, lines 45 – 60; column 3, lines 55 – 65); wherein

the flow accelerating means is a solid coating metal material for increasing insulation of the fluid and reducing a flow resistance of the fluid and wherein the solid coating material is a solid metal (item 12 – figure 1; column 2, lines 45 – 60; column 3, lines 50 – 60); wherein the solid coating metal material is one of lead, indium, cadmium, tin and silver (column 3, lines 55 – 62).

With respect to claim 12 and 15, Yotsutsuji, et al. teach a molding system comprising: a cylinder having an inlet and an outlet; a screw installed inside the cylinder and making a mold material and a mixture including a plastic introduced into the inlet of the cylinder flow toward the outlet; a heater for heating the mold material and mixture introduced in the cylinder (column 3, lines 45 – 50; column 4, lines 30 – 35, 45 – 55); a fixed mold having a passage for injecting a fluid therethrough and an internal space (item 1 – figure 1); a movable mold detachably attached to the fixed mold and forming a molding space together with the internal space of the fixed mold (item 1’ – figure 1); and a same flow accelerating material means provided on the inner walls of both the fixed mold and the movable mold that form the molding space for accelerating flow of the fluid injected into the injection mold (item 12 and 12’ – figure 1; column 2, lines 45 – 60; column 4, lines 1 – 5, 30 – 35); wherein the flow accelerating means is a solid coating material for increasing insulation of the fluid and reducing a flow resistance of the fluid (item 12 and 12’ – figure 1; column 2, lines 45 – 60; column 4, lines 1 – 5, 30 – 35).

Claims 1 – 3, 5 and 12 – 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Hendry, et al. (U.S. 4,201,742). Hendry, et al. teach a fixed mold having a

passage for injecting a fluid therethrough and a internal space (item 12 – figure 1); a movable mold detachably attached to the fixed mold and forming a molding space together with the internal space of the fixed mold (item 10 – figure 1); and a same flow accelerating material means provided on the inner walls of both the fixed mold and the movable mold that form the molding space for accelerating flow of the fluid injected into the injection mold (column 3, lines 55 – 60); wherein the same flow accelerating material means is a solid coating material for increasing insulation of the fluid and reducing a flow resistance of the fluid (column 3, lines 55 – 60); wherein the solid coating material is a polymer coating material and wherein the polymer coating material is one of PTFE (polytetrafluoroethylene), PE (polyethylene) and methacrylates (column 3, lines 55 – 57).

With respect to claims 12 – 15, Hendry, et al. teach a molding system comprising: a cylinder having an inlet and an outlet; a screw installed inside the cylinder and making a mold material and a mixture including a plastic introduced into the inlet of the cylinder flow toward the outlet; a heater for heating the mold material and mixture introduced in the cylinder (column 2, lines 65 – 68; column 6, lines 20 – 30); a fixed mold having a passage for injecting a fluid therethrough and an internal space (item 12 – figure 1); a movable mold detachably attached to the fixed mold and forming a molding space together with the internal space of the fixed mold (item 10 – figure 1); and a same flow accelerating material means provided on the inner walls of both the fixed mold and the movable mold that form the molding space for accelerating flow of the fluid injected into the injection mold (column 3, lines 55 – 60); wherein a foaming

agent supplier is provided at the side of the inlet of the cylinder to supply a foaming agent into the cylinder (column 1, lines 15 – 25); wherein a gas supplier is provided at the side of the inlet of the cylinder to supply a gas into the cylinder (column 1, lines 15 – 25); and wherein the flow accelerating means is a solid coating material for increasing insulation of the fluid and reducing a flow resistance of the fluid (column 3, lines 55 – 60).

Response to Arguments

15. Applicant's arguments, see pages 12 – 18, filed April 25, 2006, with respect to the rejection(s) of claim(s) 1 – 7 under 102(b) and claims 8 – 15 under 103(a) have been fully considered and are persuasive. Applicant argued that Iwami, et al. did not teach that both the fixed mold and detachable mold surfaces were both coated with the flow accelerating means. Examiner agrees and thus, the rejection has been withdrawn.

However, upon further consideration, a new ground(s) of rejection is made in view of Yotsutsuji, et al. (U.S. 4,225,109) and Hendry, et al. (U.S. 4,201,742). Yotsutsuji, et al. teach an injection molding apparatus, wherein the fixed mold **and** detachable mold inner surfaces are coated with a flow accelerating means to deter the injected resin from cooling prematurely. Similarly, Hendry, et al. teach an apparatus, wherein both the fixed mold and detachable mold surfaces are coated with a thin layer of Teflon to act as a thermo-barrier, allowing the plastic to remain in its heated state, and thus, deter the plastic from cooling too quickly. In this way, the heat of the plastic is retained at the surface until the desired surface finish on the part is obtained.

Conclusion

16. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Maria Veronica D. Ewald whose telephone number is 571-272-8519. The examiner can normally be reached on M-F, 8 - 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dr. Yogendra Gupta can be reached on 571-272-1316. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MVE


JOSEPH S. DEL SOLE
PRIMARY EXAMINER
